What Is Claimed Is:

1. A diagnostic assay for detecting and/or quantifying Aβ peptide which may be present in a candidate solution, comprising:

(a) contacting the candidate solution with a solid support with a heavy metal cation immobilized thereon to capture Aβ peptide on the surface of the solid support, thereby forming a first complex which comprises solid support/heavy metal cation/Aβ peptide;

(b) blocking all exposed metal binding sites remaining after Aβ capture with a blocker;

(c) contacting the first complex, which has been passed through step (b), with an antibody specific for Aβ peptide to form a second complex which comprises solid support/heavy metal cation/Aβ peptide/ antibody specific for Aβ peptide;

(d) labelling the second complex to form a detectable third complex which comprises solid support/heavy metal cation/Aβ peptide/ antibody specific for Aβ peptide/label; and

(e) detecting the third complex, and quantifying Aβ peptide which may be present in the candidate solution.

2. A diagnostic assay for detecting and/or quantifying Aβ peptide which may be present in a candidate solution, comprising:

(a) contacting the candidate solution with a solid support with a heavy metal cation immobilized thereon to capture Aβ peptide on the surface of the solid support, thereby forming a first complex which comprises solid support/heavy metal cation/Aβ peptide;

(b) blocking all exposed metal binding sites remaining after Aβ capture with a blocker;

(c) contacting the first complex, which has been passed through step (b), with an antibody specific for Aβ peptide, called Aβ antibody, to form a second complex which comprises solid support/heavy metal cation/Aβ peptide/Aβ antibody;

(d) contacting said second complex with one or more anti-antibodies specific to the Aβ antibody to form a third complex which comprises solid support/heavy metal cation/Aβ peptide/Aβ antibody/one or more anti-antibodies;

(e) labelling said third complex to form a detectable fourth complex which comprises solid support/heavy metal cation/Aβ peptide/Aβ antibody/one or more anti-antibodies/label; and

(f) detecting the fourth complex, thereby quantifying Aβ peptide which may be present in the candidate solution.

3. ~~A diagnostic~~ The assay as claimed in claim 1, wherein said heavy metal cation is selected from the group consisting of zinc (II) and copper (II) complexed to nitriloacetic acid.

4. ~~A diagnostic~~ The assay as claimed in claim 2, wherein said heavy metal cation is selected from the group consisting of zinc (II) and copper (II) complexed to nitriloacetic acid.

5. ~~A diagnostic~~ The assay as claimed in claim 3, wherein said antibody at step (c) is specific to $A\beta_{1-42}$ and does not cross react with $A\beta_{1-40}$.

6. ~~A diagnostic~~ The assay as claimed in claim 3, wherein said antibody at step (c) is specific to $A\beta_{1-40}$ and does not cross react with $A\beta_{1-42}$.

7. ~~A diagnostic~~ The assay as claimed in claim 4, wherein said antibody at step (c) is specific to $A\beta_{1-42}$ and does not cross react with $A\beta_{1-40}$.

8. ~~A diagnostic~~ The assay as claimed in claim 4, wherein said antibody at step (c) is specific to $A\beta_{1-40}$ and does not cross react with $A\beta_{1-42}$.

9. ~~A diagnostic~~ The assay as claimed in claim 5, wherein said antibody is labelled with a radioisotope.

10. ~~A diagnostic~~ The assay as claimed in claim 6, wherein said antibody is labelled with a radioisotope.

11. ~~A diagnostic~~ The assay as claimed in claim 7, wherein said antibody is labelled with a radioisotope.

12. ~~A diagnostic~~ The assay as claimed in claim 8, wherein said antibody is labelled with a radioisotope.

13. ~~A diagnostic~~ The assay as claimed in claim 5, wherein said enzyme is horseradish peroxidase.

14. ~~A diagnostic~~ The assay as claimed in claim 6, wherein said enzyme is horseradish peroxidase.

15. ~~A diagnostic~~ The assay as claimed in claim 7, wherein said enzyme is horseradish peroxidase.

16. ~~A diagnostic~~ The assay as claimed in claim 8, wherein said enzyme is horseradish peroxidase.

17. A kit for carrying out the assay of claim 1 or 2, which comprises a carrier means compartmentalized in close confinement therein to receive one or more container means which comprises a first container means containing a solid support having a heavy metal cation immobilized thereon and a second container means containing an antibody specific for Aβ peptide.

18. The kit as claimed in claim 17, wherein said heavy metal cation is selected from the group consisting of zinc (II) and copper (II) complexed to nitriloacetic acid.

19. The A kit as claimed in claim 17, wherein said antibody is labelled with a radioisotope.

20. The A kit as claimed in claim 17, wherein said enzyme is horseradish peroxidase.

21. The A kit as claimed in claim 17, wherein said carrier means further comprises a third container means containing an anti-antibody which is specific for the Aβ antibody.

22. The A kit as claimed in claim 21, wherein said anti-antibody is labelled with a radioisotope.

23. A kit for carrying out the assay of claim 1 or 2, which comprises a carrier means compartmentalized in close confinement therein to receive one or more container means which comprises a first container means containing a solid support having a heavy metal cation immobilized thereon and a second container means containing a labelled antibody specific for Aβ peptide.

24. The A kit as claimed in claim 23, wherein said heavy metal cation is selected from the group consisting of zinc (II) and copper (II) complexed to nitriloacetic acid.

25. The A kit as claimed in claim 23, wherein the labelled antibody is labelled by a radioisotope.

26. The A kit as claimed in claim 23, wherein said enzyme is horseradish peroxidase.

27. A kit for carrying out the assay of claim 1 or 2, which comprises a carrier means compartmentalized in close confinement therein to

receive one or more container means which comprises a first container means containing a solid support having a heavy metal cation immobilized thereon and a second container means containing an antibody specific for Aβ peptide bound to a labelled anti-antibody.

28. The kit as claimed in claim 27, wherein said heavy metal cation is selected from the group consisting of zinc (II) and copper (II) complexed to nitriloacetic acid.

29. The kit as claimed in claim 27, wherein the labelled antibody is labelled by a radioisotope.

30. The kit as claimed in claim 27, wherein said enzyme is horseradish peroxidase.

31. A method for purification of Aβ peptide from biological fluids which comprises:

(a) methylating cysteine groups of peptides in the biological fluid;

(b) acidifying the biological fluid obtained from step (a);

(c) applying the biological fluid obtained from step (b) to a copper-charged chelating-Sepharose column;

(d) washing the column with equilibration buffer to obtain an eluate solution; and

(e) collecting the eluate solution, thereby obtaining purified Aβ peptide.

32. A method for purification of Aβ peptide from biological fluids which comprises:

(a) methylating cysteine groups of proteins in the biological fluid;

(b) acidifying the biological fluid obtained from step (a);

(c) adding to the biological fluid obtained from step (b), a free copper-charged chelating slurry to form a mixture;

(d) centrifuging the mixture obtained from step (c) to obtain a pellet;

(e) washing the pellet obtained from step (d) with equilibration buffer, thereby obtaining purified Aβ peptide.

33. A kit for carrying out the assay of claim 31 which comprises a carrier means compartmentalized in close confinement therein to receive one or more container means which comprises a first container means containing a copper charged chelating-Sepharose column and a second container means containing an antibody specific for Aβ peptide which may be used to confirm presence of purified Aβ peptide.

34. A kit for carrying out the assay of claim 32 which comprises a carrier means compartmentalized in close confinement therein to receive one or more container means which comprises a first container means containing free copper-charged chelating-Sepharose and a second container means containing an antibody specific for Aβ peptide which may be used to confirm presence of purified Aβ peptide.